

Serial No. 10/661,688
Atty. Doc. No. 2003P12262US

In The Claims:

Claim 1 (Presently Amended). A turbine blade assembly comprising:
a platform having a leading edge face, a trailing edge face, a first side and a second
side;

5 an airfoil portion extending from the platform;
a hollow shank portion disposed beneath the platform;
a cooling channel extending through the platform beginning in an area near the leading
edge face and extending through the trailing edge face of the platform, the cooling channel
extending substantially proximate to the first side of the platform; and

10 a plurality of longitudinally-spaced cooling holes extending between the hollow shank
portion and the cooling channel, wherein the cooling holes are oriented substantially transverse
to the cooling channel and adapted to admit impingement cooling fluid into at least a portion of
said cooling channel.

2 (Original). The blade assembly of claim 1 wherein the cooling channel is
15 substantially oval shaped.

3 (Original). The blade assembly of claim 1 wherein the cooling channel is
substantially oblong shaped.

4 (Original). The blade assembly of claim 1 wherein the cooling channel has
substantially rounded corners.

20 5 (Original). The blade assembly of claim 1 wherein the cooling channel includes an
upper wall and a lower wall, wherein the upper and lower walls are substantially flat.

6 (Original). The blade assembly of claim 5 wherein the upper and lower walls are
substantially parallel.

7 (Original). The blade assembly of claim 1 wherein the cooling holes are substantially
25 circular in cross-section.

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8 (Presently Amended). The blade assembly of claim 1 further comprising a second cooling channel extending through the platform beginning in an area near the leading edge face and extending through the trailing edge face of the platform, the second channel extending substantially proximate to the second side of the platform; and

5 a plurality of longitudinally-spaced cooling holes extending between the hollow shank portion and the second cooling channel, wherein the cooling holes are oriented substantially transverse to the second cooling channel and adapted to admit impingement cooling fluid into at least a portion of said second cooling channel.

9 (Presently Amended). A turbine blade assembly comprising:
10 a platform having a leading edge face, a trailing edge face, a first side and a second side;
an airfoil portion extending from the platform;
a hollow shank portion disposed beneath the platform;
a cooling channel extending through the platform beginning in an area near the leading
15 edge face and extending through the trailing edge face of the platform, the cooling channel extending substantially proximate to the first side of the platform; and
a plurality of cooling holes extending between the hollow shank portion and the cooling channel, wherein the cooling holes are oriented substantially transverse to the cooling channel;
and The blade assembly of claim 1 further comprising

20 a branch channel in fluid communication with the cooling channel, the branch channel including an edge segment and an exhaust segment, wherein the edge segment extends substantially proximately along at least a portion of the trailing edge face of the platform.

10 (Original). The blade assembly of claim 9 wherein the platform includes a top surface, and the exhaust segment extends upward from the edge segment and through the top
25 surface of the platform.

11 (Presently Amended): The blade assembly of claim 4-9 wherein the cooling channel is partially restricted by a cover.

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12 (Original). The blade assembly of claim 11 wherein the cover is one of a plate or a plug.

13 (Original). The blade assembly of claim 11 further comprising an additional channel, the cooling channel and the additional channel being in fluid communication, wherein the
5 additional channel is disposed between the cooling channel and the first side of the platform.

14 (Original). The blade assembly of claim 11 further comprising one or more passages extending between the cooling channel and one of the sides of the platform.

15 (Original). The blade assembly of claim 11 further comprising one or more passages extending between the cooling channel and the top surface of the platform.

10 16 (Presently Amended). A turbine blade assembly comprising:

a platform having a leading edge face, a trailing edge face, a first side and a second side;

an airfoil portion extending from the platform;

a hollow shank portion disposed beneath the platform;

15 a first cooling channel extending through the platform beginning in an area near the leading edge face and extending through the trailing edge face of the platform, the first cooling channel extending substantially proximate to the first side of the platform;

a second cooling channel extending through the platform beginning in an area near the leading edge face and extending through the trailing edge face of the platform, the second
20 cooling channel extending substantially proximate to the second side of the platform,

wherein each of the cooling channels is defined by a substantially flat top surface and substantially flat bottom surface and two curved side walls connecting between the top and bottom surfaces, the top and bottom surfaces being substantially parallel to each other; and

a first set of longitudinally-spaced cooling holes extending between the hollow shank
25 portion and the bottom surface of the first cooling channel, a second set of longitudinally-spaced cooling holes extending between the hollow shank portion and the bottom surface of the second cooling channel, wherein the first and second cooling holes are oriented substantially

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transverse to the first and second cooling channels and adapted to admit impingement cooling fluid into at least a portion of said first and second cooling channels.